

REMARKS

This Amendment and Response is submitted in reply to the Office Action dated August 25, 2006, in which the Examiner:

indicated claims 2 and 6-11 would be allowable if rewritten in independent form;

objected to informalities in claim 16;

rejected claims 5 under 35 U.S.C. § 112, second paragraph, as indefinite; and

rejected claims 1, 3-5 and 12-17 under 35 U.S.C. § 103(a) as unpatentable over WIPO Publication No. WO 01/06624 to Sasaki et al. ("Sasaki"), in view of JP 56-71442 ("Nakada").

Applicant respectfully traverses the rejections below. Claims 1-17 are currently pending. The current Amendment amends claims 1-10 and 16, and adds claims 18 and 19, leaving claims 1-19 pending upon entrance of the current Amendment. Claims 1 and 16 are independent claims.

Claim 16 was objected to on the basis of a claim recitation that was erroneously repeated. Applicant thanks the Examiner for bringing this to our attention. The repeated recitation has been removed from the amended claim 16. Accordingly, Applicant respectfully requests that the objection to claim 16 be withdrawn.

Claim 5 was rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Applicant respectfully submits that claim 5, as amended, is not indefinite, and requests that the rejection of claim 5 under 35 U.S.C. § 112, second paragraph be withdrawn.

Claims 1 and 16 were rejected under 35 U.S.C. § 103(a) as unpatentable over Sasaki in view of Nakada. To support an obviousness rejection under 35 U.S.C. § 103(a), the Examiner must establish a prima facie case of obviousness. Where the Examiner seeks to combine or modify reference teachings, a prima

facie case of obviousness is improper unless there is a motivation or suggestion to combine or modify the reference teachings.

Applicant's amended claim 1 recites a rotor for an electric motor, wherein, in at least one sector, in a cross-sectional view, the accommodating spaces for the conductor rods are made to be curved along their longitudinal axis. Applicant's amended claim 16 is directed to an electric motor and includes similar recitations.

The Examiner acknowledges that Sasaki does not teach or suggest accommodating spaces for conductor rods that are curved along their longitudinal axis. (Office Action, p. 3.) The Examiner looks to Nakada to supply the deficiencies of Sasaki, stating:

Nakada teaches a motor rotor 1 including accommodating spaces (rotor slots) 2A for the conductor rods and made to be curved along their longitudinal axis (Fig. 6). This reduces the torque variation of the motor. (Id.)

As an initial matter, Applicant notes that the Examiner is apparently basing his assessment of the teachings of Nakada solely on the Abstract of that reference, and what might be gleaned from the figures. Applicant notes that, for the reasons outlined in MPEP 706.02.II, this practice is "generally inappropriate." To ensure the record is clear, Applicant requests that the Examiner either stop relying on Nakada, or obtain a full translation of the underlying reference.

In the interests of furthering prosecution, Applicant notes that (based on the teachings discernible from the Nakada's Abstract and Figures) Nakada does *not* teach or suggest that the shape of the slots 2A "reduces the torque variation of the motor," as the Examiner suggests. Instead, Nakada teaches:

Adjacent slots 2A are so disposed as to constantly make contact with the rotor core 1 in radial directions, and secondary conductor is wound on the slots 2A so a[s] to constantly intersect with the magnetic flux from the stator. Thus, [the] secondary is continuously existed [sp? – excited] for all time, thereby obtaining averaged torque at the motor. (Nakada, Abstract.)

Thus, Nakada appears to teach that it is the disposition of the slots 2A on the rotor core 1 that results in "obtaining averaged torque at the motor." In fact, the un-curved slots 2A in Figure 3 and 4(B) appear to achieve the same effect. Therefore, even if the slots 2A in Nakada's Figure 6 are "curved," Nakada does not appear to teach or suggest (in the Abstract or Figures) that such a shape is better than

any other. Hence, Nakada does not provide any motivation or suggestion to modify Sasaki to include slots like those in Nakada's Figure 6.

Applicant additionally notes that Sasaki, considered as a whole, appears to teach away from the slot disposition taught by Nakada. For instance, Sasaki teaches:

In this synchronous motor, the neighboring members of the slots are spaced a distance which is referred to as a slot interval, the slot interval at a location adjacent one end of rotor magnetic poles being smaller than the slot interval at a location adjacent a center point of the rotor magnetic poles. (Sasaki, p. 3, line 25 – p. 4, line 1; see also, p. 24, lines 4-9; Figure 1.)

This larger slot interval "at a location adjacent a center point of the rotor magnetic poles" enables the magnetic fluxes from rotor permanent magnets to preferentially leak to the outer peripheral surface of the rotor in this area, giving:

...the pattern of distribution of the magnetic fluxes in an air gap between the stator and the rotor... a generally trapezoidal or sinusoidal waveform.... (Sasaki, p. 4, lines 2-8.)

Thus, Sasaki's concern with shaping the flux distribution from the rotor permanent magnets appears to teach away from Nakada's disposition of slots, which results in secondary conductor in Nakada's slots 2A *constantly* intersecting with the magnetic flux from the stator.

As the Examiner has improperly relied on only the Abstract and Figures of a foreign language reference (Nakada), as nothing in the Abstract and Figures of Nakada provides a motivation to modify the reference teachings to remedy the deficiencies of Sasaki, and as Sasaki teaches away from slot disposition taught by Nakada, Applicant respectfully submits that the Examiner has failed to establish a proper *prima facie* case of obviousness. Accordingly, Applicant respectfully submits that the rejection of claims 1 and 16 under 35 U.S.C. § 103(a) as unpatentable over Sasaki in view of Nakada is improper for at least these reasons, and should be withdrawn.

Claims 3-5, 12-15 and 17 were also rejected under 35 U.S.C. § 103(a) as unpatentable over Sasaki in view of Nakada. These claims all depend, directly or indirectly, from claim 1 or claim 16, and include additional recitations thereto. Accordingly, Applicant respectfully submits that the rejection of claims 3-5, 12-15 and 17 under 35 U.S.C. § 103(a) as unpatentable over Sasaki in view of Nakada is

improper for at least the same reasons stated in connection with claims 1 and 16, and should be withdrawn.

Further regarding claim 3, claim 3 depends directly from claim 1 and further recites that the distance between the accommodating spaces for the conductor rods in the at least one sector is constant. Even if Nakada teaches a constant spacing between slots 2A (as the Examiner alleges - Office Action, p. 4), Sasaki expressly teaches away from a constant spacing between slots, in the citation provided above. As noted, Sasaki teaches that "the slot interval at a location adjacent one end of rotor magnetic poles [is] smaller than the slot interval at a location adjacent a center point of the rotor magnetic poles." (Sasaki, p. 3, line 25 – p. 4, line 1.)

Accordingly, Applicant respectfully submits that the rejection of claim 3 under 35 U.S.C. § 103(a) as unpatentable over Sasaki in view of Nakada is also improper for this additional reason, and should be withdrawn.

Further regarding claim 5, Applicant's amended claim 5 depends indirectly from claim 1 and further recites that the curvature of the accommodating spaces for conductor rods in the at least one sector is such that a radial outer end of each accommodating space for conductor rods is turned toward the magnet axis, so as to be closer to the magnet axis than if the accommodating spaces for conductor rods were not curved along their longitudinal axis.

As noted above, the Examiner acknowledged that Sasaki does not teach or disclose curved accommodating spaces for conductor rods. In connection with claim 5, the Examiner states that the combination of Sasaki and Nakada would teach the claim 5 recitations:

...since Nakada's curved slots would be turned in relation to Sasaki's magnetic axis and their ends close to the magnet axis. (Office Action, p. 4.)

Applicant respectfully disagrees with this reasoning. Nakada does *not* teach or suggest any relationship between the disposition of slots 2A and a magnetic axis of the permanent magnets of the rotor. In fact, Nakada does not appear to teach or suggest that the rotor core 1 includes permanent magnets (based on the

Abstract and Figures). Therefore, even if Sasaki were modified to incorporate the slot disposition of Nakada, there is no motivation or suggestion that the slot disposition should be incorporated so as to result in the recitations of Applicant's claim 5.

Accordingly, Applicant respectfully submits that the rejection of claim 5 under 35 U.S.C. § 103(a) as unpatentable over Sasaki in view of Nakada is also improper for this additional reason, and should be withdrawn.

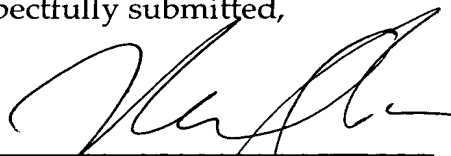
Having addressed and/or traversed each and every objection and claim rejection, Applicant respectfully requests that the objection to claim 16, and the rejections of claims 1, 3-5 and 12-17 be withdrawn, and claims 1-19 be passed to issue.

Applicant respectfully submits that nothing in the current Amendment constitutes new matter. Claim amendments were made for greater clarity and/or conformity with current U.S. practice. New claim 18 is supported by at least the original claim 2. New claim 19 is supported by at least Figure 1.

Applicant hereby petitions for a one month extension of time for response and encloses a check in the amount of \$120.00. If any additional fees are deemed necessary, authorization is hereby granted to charge any such fees to Deposit Account No. 13-0235.

Respectfully submitted,

By



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